iron, and a corresponding quantity in the scales of oxide detached from its cavities.

On Ice found in the bottoms of Rivers. *By* Thomas Andrew Knight, *Esq. F.R.S.* *In a Letter addressed to the Right Hon. Sir* Joseph Banks, *Bart. G.C.B. P.R.S.* Read May 23, 1816. [*Phil. Trans.* 1816, *p.* 286.]

The author having witnessed this phenomenon in the course of last winter in the river Teme, which runs past his residence in Herefordshire, describes the appearances that he observed, and relates the circumstances under which they occurred, for the purpose of accounting for a fact which, though frequently noticed, has not yet been satisfactorily explained.

After a night that had been intensely cold, the stones in the rocky bed of the river glistened with a kind of silvery whiteness, which, upon examination, arose from numerous spicula of ice adhering to them, and crossing each other in every direction. The river was not at that time frozen over in any part, but the temperature of the water was at the freezing point; and in a mill-pond just above, the water was replete with millions of spicula of ice, which naturally would have a tendency to rise and form a crust at the surface; but in falling over a low weir into a narrow channel, numerous eddies, occasioned by large projecting stones, constantly carried fresh spicula to the bottom, where they collected against the surfaces and in the cavities opposed to the current, especially in those parts where it became less rapid.

Had the coldness of the weather continued, it is conceived that the ice might have continued to accumulate to much larger quantities, as it had been known to do in the same situation some years preceding, when the frost was of long duration.

It was remarked by Mr. Knight, that near the shore the ice that adhered to stones partly out of the water had a firmer consistence, although apparently originating from the same source. This ice extended as far as half a yard from the shore, and was three or four inches below the surface of the water. This did not melt so rapidly as that which was deposited at greater distances from the sides, and at greater depths.

Although the existence of porous ice in any large quantities may thus be explained in larger rivers, where there are eddies sufficient to carry floating spicula in contact with the bottom, yet the author expresses his doubts respecting large masses of solid ice said to have been found at the bottoms of deep and sluggish rivers, in which there are no eddies to cause the descent even of small particles, and no obvious cause of subsequent consolidation.